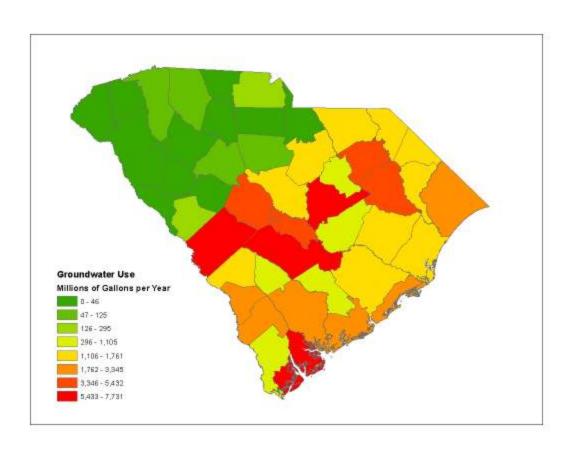
# South Carolina Department of Health and Environmental Control

# South Carolina Groundwater Use Report 2012 Annual Summary



www.scdhec.net/water



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

# South Carolina Groundwater Use Report 2012 Summary

Compiled by: Alexander Butler, Hydrogeologist

Bureau of Water David Wilson, Chief

Water Monitoring, Assessment, and Protection Division Chuck Gorman, Director

Water Quantity Permitting Section Robert Devlin, Manager

**Technical Document Number: 0723-13** 

Bureau of Water July 2013

### **Definitions**

**Aquifer** – A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs. An alternate definition includes saturated material capable of providing economically viable amounts of water to wells or springs.

**Aquaculture water use (water use category)** – Water used for raising, farming and/or harvesting of organisms that live in water, such as fish, shrimp and other shellfish and vegetal matter (seaweed).

**Consumptive water use** – The amount of water withdrawn that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment

**Effluent (wastewater)** – Water conveyed out of a wastewater treatment facility or other works used for the purpose of treating, stabilizing, or holding wastewater. Effluent is often highly treated and is an excellent option for reuse of wastewater for irrigation.

**Evapotranspiration** – Collective term, including water discharged to the atmosphere as a result of evaporation from the soil and surface-water bodies and plant transpiration.

**Fall Line** – The geologic and physiographic surface boundary separating the sedimentary deposits of the Coastal Plain from the metamorphic and igneous rocks of the Piedmont.

**Farm** – Any operation from which \$1000.00 or more of agricultural products were sold or normally would be sold during the year.

**Golf course irrigation (water use category)** – Water applied to maintain golf course turf, including tee boxes, fairways, putting greens, associated practice areas and periphery aesthetic landscaping.

**Groundwater** – Generally, all subsurface water as distinct from surface water; specifically, that part of the subsurface water in the saturated zone.

**Hydroelectric water use (water use category)** – Water used in generating electricity where turbine generators are driven by falling water.

**Industrial water use (water use category)** – Water used for commercial and industrial purposes, including fabrication, processing, washing, in-plant conveyance and cooling.

**Irrigated acreage** – Acreage capable of being irrigated, with regard to availability of water, suitable soils and topography of land.

**Irrigation water use (water use category)** – Water that is used for agricultural and landscaping purposes including turf farming and livestock management.

**Mining water use (water use category)** – Water that is used for in conjunction with surface or subsurface mining of minerals or natural materials

Other use (water use category) – Any use of surface water or groundwater not specifically identified in any of the other categories.

**Reclaimed water** – Wastewater treatment plant effluent that has been diverted, intercepted, or otherwise conveyed for use before it reaches a natural waterway or aquifer.

**Surface water** – Water flowing or stored on the earth's surface such as a stream, lake, or reservoir.

**Thermoelectric water use (water use category)** – Water used in generating electricity from fossil fuel (coal, oil, natural gas), geothermal, biomass, solid waste, or nuclear energy.

Water supply (water use category) — Water withdrawn by public and private water suppliers and conveyed to users or groups of users. Water suppliers provide water for a variety of uses including domestic, commercial, industrial and public water use.

Water usage rates – As utilized in this report, measurements to quantitatively represent volumetric withdrawals per unit of time; as in gallons per minute (gpm), gallons per day (gpd) and gallons per year (gpy). Unless otherwise stated, figures in this report are presented in millions of gallons per year.

**Water use** – Generally, water that is used for a specific purpose (i.e., domestic use, industrial, etc.). Broadly, human interaction with and influence on the hydrologic cycle, and includes water withdrawal, distribution, consumptive use, wastewater collection and return flow.

**Withdrawal** – The removal of surface water or groundwater from its current setting in the natural hydrologic system for use, including, but not limited to, water supply, industrial use, commercial use, domestic use, irrigation, livestock, power generation

### **Forward**

The South Carolina Department of Health and Environmental Control (DHEC) is committed to the responsible management of South Carolina's water resources by encouraging continued conservation and reasonable use to ensure a sustainable supply for present and future demands. The South Carolina *Groundwater Use and Reporting Act*, §49-5-10 et. seq., require groundwater users that withdraw three (3) million gallons or greater in any month to register with and report that use annually to the Water Use Program at DHEC.

Groundwater Use data is used by the State of South Carolina to better define the distribution and demand for groundwater resources across the state. Data from the Groundwater Use Program at DHEC is shared between other local, state, and federal regulatory and scientific agencies to establish a common understanding of the demands placed upon our groundwater resources. This common database has proven critical in water management decisions and groundwater use conflict resolution.

Statistics utilized in this report represent data obtained from users registered with the Groundwater Use Program. Consumptive use from private domestic wells, facilities that do not meet the reporting threshold, or data from facilities failing to report their annual water use are not included in this annual summary. For the year 2012, compliance of reporting sources exceeded 99%.

If you have questions, or would like to obtain further information about reported groundwater withdrawals in South Carolina, please contact:

Groundwater Use Program SCDHEC Bureau of Water 2600 Bull Street Columbia, SC 29201 www.scdhec.net/water

DEFINITIONS	3
FORWARD	5
INTRODUCTION	7
PURPOSE AND METHODOLOGY	7
SOUTH CAROLINA CLIMATE	8
GEOGRAPHY AND PHYSIOGRAPHY	9
GROUNDWATER RESOURCES	. 11
GROUNDWATER USE SUMMARY BY SOURCE, CATEGORY AND COUNTY IN SOUTH CAROLINA, 2012	. 13
TEMPORAL DISTRIBUTION OF WATER USE	. 14
SPATIAL DISTRIBUTION OF GROUNDWATER USE	. 16
APPENDIX A: GROUNDWATER USE SUMMARY TABLE	. 21

### Introduction

South Carolinians have historically enjoyed an available fresh water supply that is clean, abundant, and easily attainable. Growth and development in the state have placed increasing demand on our water supplies. With limited and sporadic rainfall events, groundwater systems under continuous natural discharge and, in recent years, human use (pumpage) showed steady and, at times, drastic water level declines. Some homeowners that rely on shallow water wells have been forced to drill deeper wells or seek alternate sources of water supply.

In conjunction with natural conditions, the continued impact to groundwater systems through human induced contamination (physical and chemical) or natural impact demonstrate the vulnerability of this finite resource and the continuing need to closely monitor, manage and preserve the resource in South Carolina for current and future generations. The state General Assembly declared that,

"...the groundwater resources of the State be put to beneficial use to the fullest extent to which they [are] capable and to provide and maintain conditions which are conducive to the development and use of all water resources."

Consistent and accurate data collection is requisite in establishing water use trends and implementing reasonable management strategies. Water use reporting outside of designated Capacity Use Areas has been historically voluntary. As of January 1, 2001, anyone withdrawing groundwater or surface water in excess of three (3) million gallons per month (in any month) must register and report that use annually to the South Carolina Department of Health and Environmental Control (Department). Registration and reporting is now a requirement of law and the Department has authority to take enforcement action against those not reporting.

### Purpose and Methodology

The purpose of the South Carolina Groundwater Use Report is to summarily present reported groundwater use in South Carolina by county and use category during calendar year 2012. The Department maintains and continually updates the groundwater use and facility databases utilized in this report. Groundwater use data were collected by annual reporting of groundwater use by registered users, as required and mandated by state law, and reported in millions of gallons unless stated otherwise.

### South Carolina Climate

The climate in South Carolina is affected by many factors, notably its location in the midlatitudes and its proximity to the Appalachian Mountains and the Atlantic Ocean. During the summer, ocean current-driven air masses such as the Bermuda High routinely push tropical air from the Gulf of Florida upland from the coast. These warm, moist currents collide with cooler, drier air masses to generate rainfall, and at times, severe thunderstorms. In contrast, the Appalachian region in the northwest portion of the state experiences cooler temperatures, owing in part to upward lifting of air masses and subsequent cooling effect provided by the increase in altitude. Altitude change also causes the additional phenomenon of down-slope heating as air masses from the mountains settle and compress over the eastern Blue Ridge and Piedmont region. During the winter months, the highlands of the Blue Ridge escarpment deflect northerly cold air to the southwest, often lessening the impact of major cold fronts and winter storms.

The vast majority of the state is classified as humid subtropical except in the Blue Ridge physiographic province, where it is humid continental. Average temperature varies from the mid-50s °F in the mountains to low-60s °F along the coast. The average annual precipitation is approximately 48 inches, with an annual total in the mountains of 70 to 80 inches, an annual total in the Midlands of 42 to 47 inches and an annual total along the coast of 50 to 52 inches. According to the South Carolina State Climatology Office, no month in South Carolina averages less than two inches of precipitation, regardless of location within the state. Measurable snowfall is rare, occurring one to three times a year with accumulations seldom remaining more than a day or two. In 2012 the average statewide temperature was above normal at 64.4°F. The average rainfall for 2012 was slightly below normal at 43.97 inches¹.

\_

<sup>&</sup>lt;sup>1</sup> Southeast Regional Climate Center, 1885-2013, "Monthly and Seasonal Climate Information"

### Geography and Physiography

South Carolina has a distinct natural beauty and an ecological diversity covering nearly 31,189 square miles, with approximately 30,111 square miles land area, 1,078 square miles inland or coastal waterways and 135 miles of coastline. The diversity we experience is resultant of climatic conditions, geology and three major physiographic regions: the Blue Ridge, the Piedmont and the Coastal Plain (**Figure 1**). The physiographic regions exhibit variations in topography, geology, hydrology and vegetation that directly affect the quantity, quality and availability of water resources in South Carolina.

### **Blue Ridge**

The Blue Ridge physiographic province is located in the extreme northwest portion of Oconee and Pickens counties, and is distinguished from other parts of South Carolina by greater elevations (1,000 – 3,300 feet) and surface relief. Dissected mountains, rugged hills and thick forest regions characterize the land surface. Surface water in the Blue Ridge takes the form of high gradient creeks and streams and natural or man-made lakes, while groundwater occurs in the fractures of the bedrock and a thin veneer of soil and saprolite overlying the bedrock. In general, water quality of streams and groundwater is excellent in the Blue Ridge owing to the constant replenishment from abundant local rainfall.

### **Piedmont**

The Piedmont physiographic province includes all counties, or portions of counties, northwest of and to the Fall Line, exclusive of those counties within the Blue Ridge province. Although similar to the Blue Ridge, the region demonstrates lower topographic relief, and therefore lower gradient streams, while elevations range from between 450 to 1000 feet above sea level. Counties in the Piedmont and Blue Ridge physiographic provinces depend primarily on the abundant regional rainfall that recharges lakes, reservoirs and major river systems. These surface water bodies constitute the primary source of water for public supply, industry, agriculture, and power production in the Piedmont Region. Similar to the Blue Ridge Province, groundwater occurs in the fractures of the bedrock and overlying soil and saprolite, and is also of good quality, except in locations where man has impacted its chemical quality.

### **Coastal Plain**

The Coastal Plain physiographic province includes all counties, or portions of counties, extending from the Fall Line east to the Atlantic Ocean. Elevations of the exposed Coastal Plain range between 450 feet to sea level. Once below the Fall Line, rivers and streams assume a different character than those found in the Piedmont. Where streams once rolled across exposed Piedmont rocks and tumbled down the occasional stretch of whitewater, the Coastal Plain streams have a slower pace with quiet meandering river channels with adjacent wetlands common. Regional geology of the Coastal Plain is characterized by aquifers developed in layers of sands, silts, or high-permeability limestone confined by units of clay and silts or low-permeability limestone. The vast majority of South Carolina's water resources are contained as groundwater in the Coastal Plain, and in general, reliance on groundwater for irrigation, industrial uses, and public water supply increases dramatically east of the Fall Line. A generalized cross-section for the Coastal Plain aquifers is presented as **Figure 2**, and a brief outline of the major aquifers in South Carolina follows.

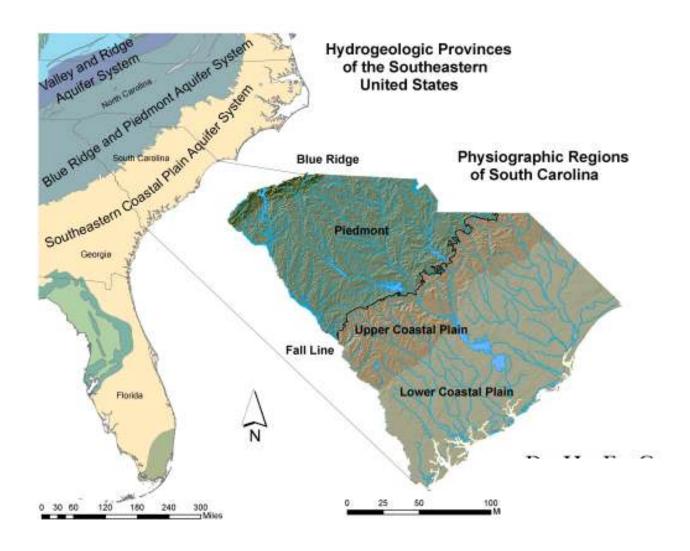
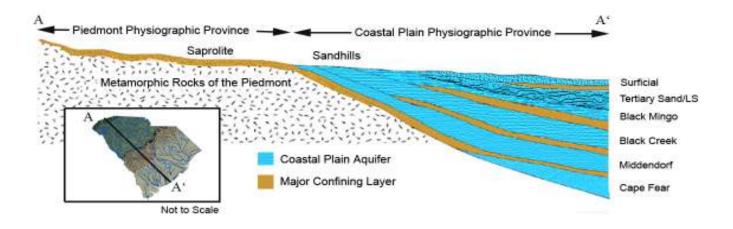


Figure 1: Hydrogeologic and Physiographic Setting for Water Use in South Carolina



**Figure 2:** Generalized Hydrogeologic Cross-Section from the Blue Ridge through the Lower Coastal Plain in South Carolina

### **Groundwater Resources**

Groundwater resources are found throughout the subsurface of South Carolina in varying quantities, qualities, and depths that reflect the nature of the geologic materials that host the respective aquifers. The following is a brief description of the State's major groundwater resources.

### Crystalline Rock Aquifer System of the Blue Ridge and Piedmont

Geology of the Blue Ridge is typically characterized by clayey saprolite, ranging in depth from several feet to tens of feet, overlying metamorphic crystalline rock. The saprolite grades downward through a highly permeable transition zone to unaltered parent bedrock. Groundwater conditions of the bedrock are dependent on the number of fractures and degree of interconnection of the fracture systems. Groundwater moves slowly through the saprolite and discharges to surface water bodies, wells, or is released from storage to the underlying bedrock through fractures. Geology of the Piedmont is similar to that of the Blue Ridge, but the diminished relief allows for greater thickness of saprolite development. In general, wells in the Blue Ridge and Piedmont regions yield little water when compared to wells drilled in the Coastal Plain owing to the inherently low porosity and permeability of the crystalline rock present in the upstate.

### **Surficial Aquifer System**

Shallow sands that comprise the Surficial aquifer are among the youngest of the Coastal Plain sediments and are found exclusively in the Lower Coastal Plain (**Figure 1**). This system is capable of producing water in modest amounts for irrigation and private drinking water supply, but is susceptible to contamination due to its shallow, unconfined nature. The Surficial sands are highly influenced by local precipitation and river stage and are prone to dramatic water level declines during times of drought.

### Tertiary Limestone/Sand Aquifer System (Floridan Aquifer System)

In the southern half of the Coastal Plain, Tertiary aquifers consisting of sand grade southeastward into an ever thickening wedge of limestone. Development of the aquifer system is common in the Charleston, Dorchester, and Berkeley County area. Southwest of the Combahee and Salkehatchie Rivers, upper sections of the limestone become increasingly permeable owing to abundant voids created from dissolved marine fossils, and are capable of storing and supplying tremendous amounts of water. The upper, highly permeable zone is the most developed, supplying the majority of residential wells in Beaufort and Jasper Counties, and is the primary source of water for public supply, irrigation, and industry in the Low Country. This southern section of the Tertiary Limestone correlates regionally with the Upper Floridan Aquifer that extends from southern South Carolina to the southern keys of Florida.

### **Black Mingo Aquifer**

Development of the Black Mingo is common in the vicinity of Charleston, Dorchester, and Berkeley counties, but has been largely overlooked south of Dorchester County owing to the increasingly prolific nature of the more shallow Tertiary Limestone (Floridan Aquifer System). Like the majority of Coastal Plain sediments, the nature of the aquifer differs dramatically from one area to the next. In the Charleston area, the aquifer is composed of permeable sand and limestone, while within the Upper Coastal Plain the Black Mingo is often a poorly producing aquifer composed of fine silt and clay, and therefore is unused in favor of the Middendorf or Tertiary Sand Aquifer.

### Pee Dee Aquifer

The Pee Dee aquifer, where present, generally produces quality water at moderate rates. The aquifer matrix is composed of sand and silt separated by discontinuous intervals of clay. Development of the Pee Dee aquifer usually takes place in conjunction with the more prolific Black Creek aquifer and has become an excellent alternative to the often-overburdened Black Creek for many uses, especially irrigation. The Pee Dee aquifer is most utilized in the northeast portion of the State, with the most demand centered between Florence and Horry Counties.

### **Black Creek Aquifer**

Though present throughout much of the Coastal Plain, development of the Black Creek aquifer has been conducted primarily in the mid-to-northern portions of the Coastal Plain. The aquifer is composed of silt and fine sand with coarse sand in the Upper Coastal Plain. The Black Creek aquifer is an important source of water for public supply, irrigation, and industry from Marion County southeast to Georgetown County.

### **Middendorf Aquifer**

The Middendorf Aquifer is a prolific source of water throughout the majority of the coastal plain and consists of coarse-grained fluvial sands near the Fall Line that grade to fine-grained marine sands and clay in the northern and eastern Lower Coastal Plain. The majority of the Pee Dee region, including Chesterfield, Darlington, Florence, and Marlboro Counties, as well as Orangeburg and Sumter Counties rely heavily on the Middendorf for irrigation, public supply, and industrial use. In the past decade, use of the Middendorf has increased along the southern coast in areas such as Charleston County.

### Cape Fear Aquifer

Little information exists from this deep sand aquifer owing to the few wells that have penetrated the formation. In general, water quality from the Cape Fear aquifer is poor over much of its extent owing to ancient, unflushed seawater and extensive mineralization. In South Carolina, the Cape Fear aquifer is largely unused.

### Groundwater Use Summary by Source, Category and County in South Carolina, 2012

The following section outlines all reported groundwater use for the State of South Carolina for the calendar year 2012. Groundwater use is summarized by category, (Appendix A). Where appropriate, the spatial temporal distribution of the magnitude of water use is demonstrated on an accompanying maps and graphs.

### Reporting Groundwater Withdrawers

For the reporting year 2012, South Carolina had 589 groundwater withdrawers with 2042 sources.

Groundwater Use Category	Facilities	Groundwater Sources
Aquaculture	4	6
Golf Course	111	261
Industrial	61	235
Irrigation	215	699
Mining	8	13
Other	3	23
Power Production	6	16
Water Supply	181	789

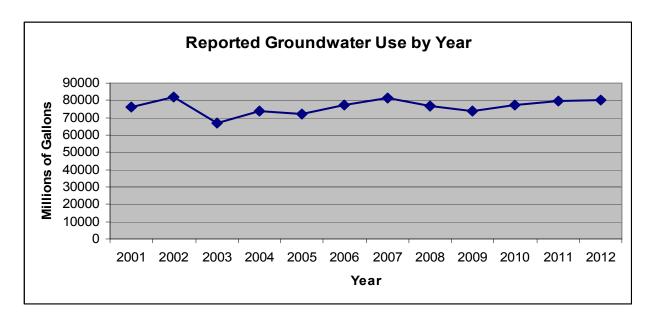
### Total Reported Groundwater Use

Total groundwater use reported for 2012 was more than 80.175 billion gallons from 589 reporting facilities.

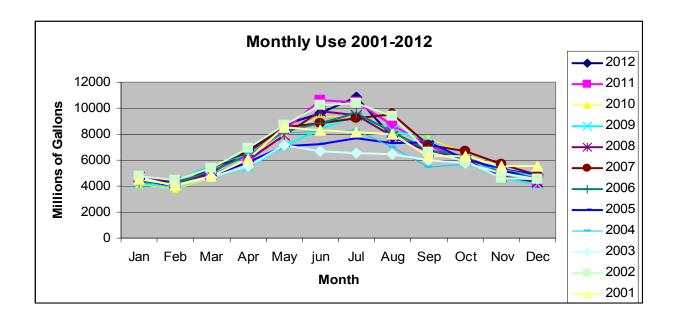
Groundwater Use Category	Millions of Gallons	Percentage
Aquaculture	239.60	0.30%
Golf Course	4,082.88	5.09%
Industrial	8,204.70	10.23%
Irrigation	24,370.43	30.40%
Mining	3,485.19	4.35%
Other	61.79	0.08%
Power Production	1,561.44	1.95%
Water Supply	38,169.67	47.61%
Total	80,175.70	100.00%

### Temporal Distribution of Water Use

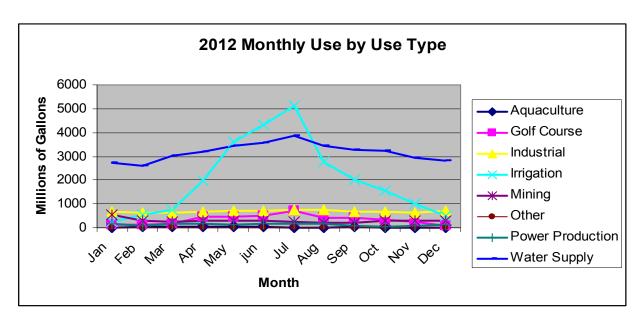
The following charts illustrate the temporal distribution of water use. Mandatory reporting of groundwater use was implemented in 2001.



Groundwater use shows a seasonal trend with the highest demand during the growing season.

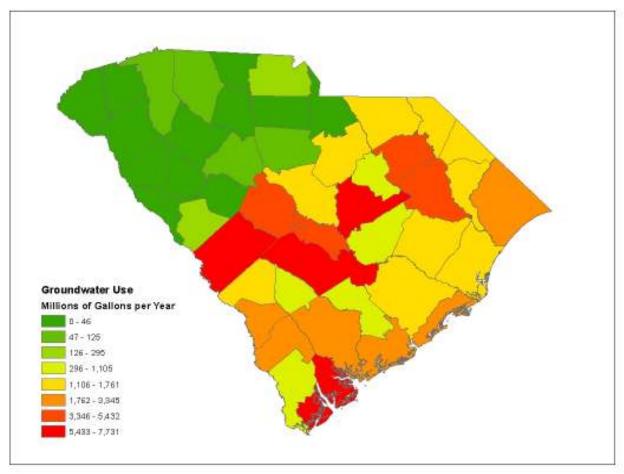


The seasonal trend is mostly due to the increase in reported withdrawals form irrigation and water suppliers.



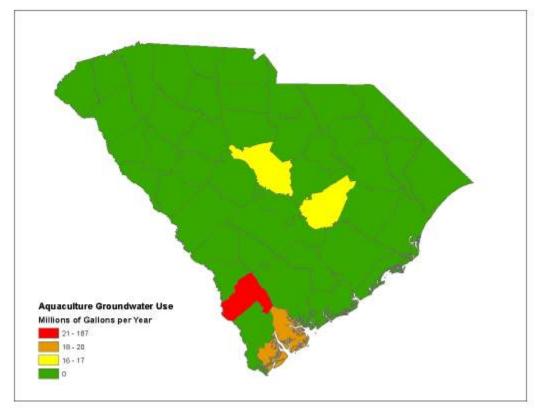
### Spatial Distribution of Groundwater Use

The following map illustrates the distribution of groundwater us by county. Groundwater use is primarily concentrated in the Coastal Plain.

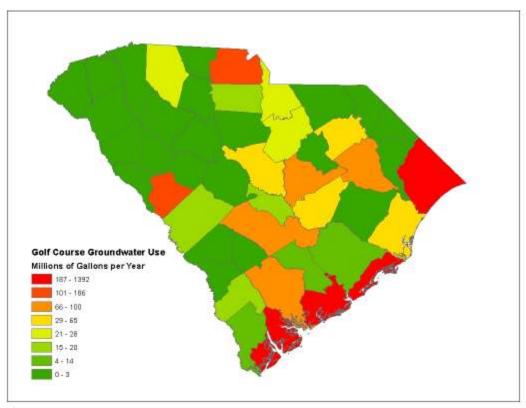


The following maps illustrate the spatial distribution of groundwater use for each of the water use categories.

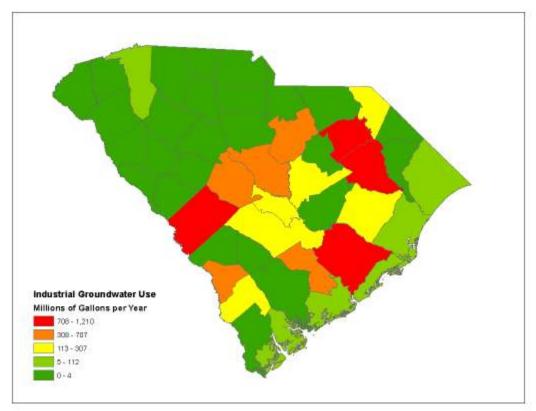
# Aquaculture Use



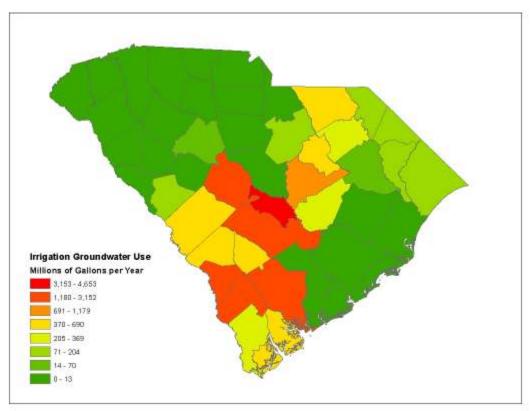
Golf Course Use



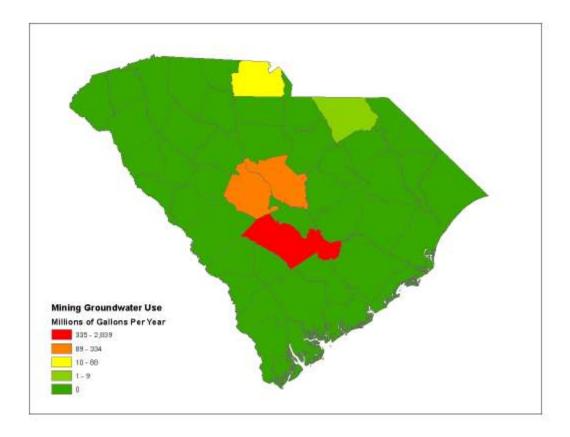
### Industrial Use



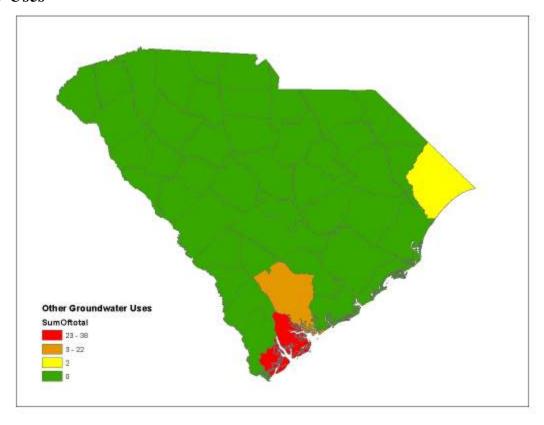
# Irrigation Use



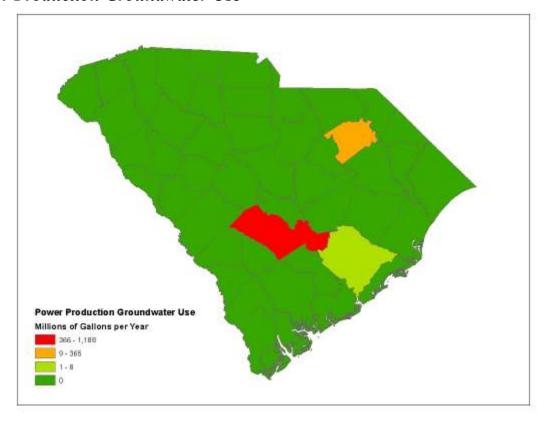
# Mining



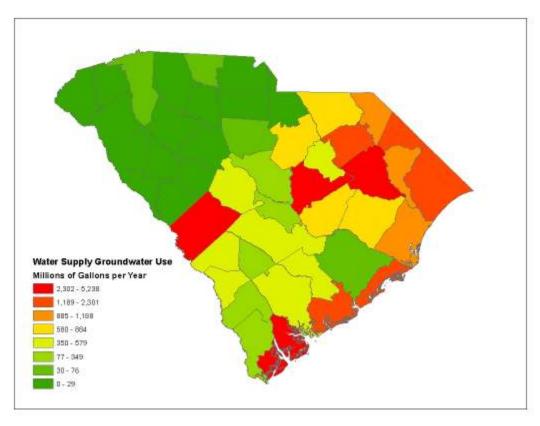
# Other Uses



### Power Production Groundwater Use



# Water Supply



**Appendix A: Groundwater Use Summary Table** \*Use in Millions of Gallons

County	Use Type	Number of Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Abbeville	Water Supply	3	0	0	0	0	0	0	0	0	0	0	0	0
Aiken	Golf Course	3	0	0	0	0.25	2.6	3.69	11.8	0.4	0	0	0	0
Aiken	Industrial	35	95.684	90.831	88.85	80.6438	99.924	74.563	88.332	70.287	85.233	92.49	98.636	84.192
Aiken	Irrigation	9	7.5	6.4	15.2	68.4	94.6	115.635	104.635	89.702	71.5	20.9	14.8	9.5
Aiken	Mining	1	0	0	0	0	0	0	0	0	0	0	0	0
Aiken	Water Supply	100	319.857	299.353	351.149	391.301	431.092	468.46	467.1624	440.04	401.894	399.929	344.141	320.567
Allendale	Industrial	3	48.9	51.2	52	39.9	57.1	59.5	60.7	55.6	52.6	52.4	56.2	48.4
Allendale	Irrigation	26	7.767	131.847	35.117	230.911	367.707	332.909	416.43	196.4672	250.501	180.368	48.922	45.748
Allendale	Water Supply	12	34.507	32.508	44.14	39.419	36.952	37.598	40.786	39.39	36.424	38.361	35.43	39.465
Bamberg	Irrigation	14	0	13	12	60.106	85.451	125.58	115.849	96.131	48.602	26.085	9.864	3.5
Bamberg	Water Supply	11	26.173	28.1511	30.9612	27.7663	34.3398	33.126	33.1271	28.4698	27.5308	27.8733	25.5032	26.3484
Barnwell	Irrigation	25	0	0	0	22.227	115.197	156.259	167.962	101.657	69.762	0	3	0
Barnwell	Water Supply	14	40.886	41.328	45.085	49.062	50.268	48.441	53.72	52.024	49.762	47.08	52.168	47.749
Beaufort	Aquaculture	2	0.001	0.001	2.001	2.101	2.301	3.002	3.002	3.002	2.401	1.701	0.001	0.001
Beaufort	Golf Course	64	45.8054	52.2476	48.0196	178.1377	168.1746	182.3032	186.8427	127.3481	165.719	105.7205	90.2424	41.5495
Beaufort	Industrial	1	2.768	2.677	3.302	3.105	3.087	3.108	3.228	3.236	2.975	2.902	2.68	2.745
Beaufort	Irrigation	78	0.01	0.01	21.333	112.91	163.487	168.348	66.589	25.43	51.48	25.429	0.142	0.01
Beaufort	Other	2	2.89	3.32	2.98	2.63	3.47	2.89	3.32	3.65	3.32	3.33	2.54	3.64
Beaufort	Water Supply	53	222.781	230.488	297.187	412.821	486.456	488.4761	554.62	438.927	426.788	369.455	329.543	279.363
Berkeley	Golf Course	3	0	0	0	1.5	2	2	2.5	2.5	1.5	1	0.5	0
Berkeley	Industrial	12	101.592	98.396	101.53	100.759	96.709	104.41	88.579	128.991	89.803	92.748	81.686	87.346
Berkeley	Irrigation Power	4	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.001	0.001	0.001	0.001	0.001
Berkeley	Production	3	0.627	0.734	0.82	0.667	0.859	0.707	0.8	0.801	0.641	0.56	0.538	0.547
Berkeley	Water Supply	9	4.97	5.338	4.395	4.934	4.932	5.11	5.686	5.175	5.254	4.927	5.296	4.88
Calhoun	Golf Course	1	0.3	0.3	0.8	2.1	2.6	2.8	3	2.8	1.9	1.1	0.9	0.4
Calhoun	Industrial	2	14.809	13.586	13.58	13.474	12.801	12.633	12.684	17.04	23.678	12.747	12.74	13.099
Calhoun	Irrigation	73	118.18	193.18	227.099	462.339	753.085	661.819	778.4834	424.789	318.3519	251.542	201.353	168.47

County	Use Type	Number of Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Calhoun	Water Supply	7	18.818	18.735	20.715	22.425	22.908	26.109	26.947	26.711	22.595	23.118	21.061	20.883
Charleston	Golf Course	18	26.728	35.106	44.808	75.841	83.212	67.325	239.271	65.822	97.831	71.864	41.579	7.957
Charleston	Industrial	5	5.001	4.61	4.55	3.89	4.66	4.3	5.17	4.64	3.551	4.03	4.08	3.76
Charleston	Irrigation	3	0	0	0	0	0	0	0	0	0	0	0	0
Charleston	Water Supply Power	18	65.718	99.129	150.713	159.324	167.906	147.363	229.886	124.841	152.083	144.854	91.873	62.268
Cherokee	Production Water	1	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	Supply	1	3.825	3.75	4	3.45	3.925	3.775	3.9	4.115	3.555	2.925	3.95	4.88
Chester	Golf Course	3	0	0	0	0	0	6.6	6.6	6.6	0	0	0	0
Chester	Industrial	1	0.525	0.408	0.112	0.029	0.04	0.013	0.017	0.018	0.018	0.021	0.087	0.461
Chesterfield	Irrigation	17	1.33	1.6	3.95	43.93	84.41	73.12	81.52	54.79	17.38	36.73	42.23	38.74
Chesterfield	Mining	1	7.152	1.812	0	0	0	0	0	0	0	0	0	0
Chesterfield	Water Supply	12	62.104	65.046	70.747	61.567	83.025	81.387	84.016	80.043	78.559	76.512	71.1832	69.844
Clarendon	Aquaculture	1	0	0	0	5.644	2.822	2.822	2.822	2.822	0	0	0	0
Clarendon	Golf Course	3	1.402	1.502	1.478	1.632	8.804	7.108	7.108	7.868	3.332	10.858	6.552	7.451
Clarendon	Irrigation	18	1.753	2.223	16.955	28.866	30.321	41.509	53.375	47.036	20.951	35.879	44.557	45.581
Clarendon	Water Supply	28	47.0553	44.4933	52.1305	54.245	60.127	57.889	65.176	59.013	55.068	56.31	51.615	51.076
Colleton	Golf Course	3	5.9	3.5	1.7	11.5	6.3	7.05	11.4	5	11	8.2	1.2	1.2
Colleton	Irrigation	27	3.2	40.2	121.3	179.8	267.1	274	284.9	294.2	257.5	235.3	137.5	2.3
Colleton	Other	1	5.203	3.918	0.08	3.787	1.721	0.049	0.055	0.078	0.027	1.264	4.149	1.528
Colleton	Water Supply	21	24.093	31.69	34.555	37.325	40.763	43.029	49.254	60.291	54.988	53.435	44.591	41.924
Darlington	Golf Course	5	0.6	0	0.5	4.9	7.3	7.5	11.7	10	4.8	5.2	0.5	0.3
Darlington	Industrial	17	104.148	58.479	57.6141	112.571	84.667	97.469	134.539	90.336	65.44	97.052	61.952	149.429
Darlington	Irrigation	20	0	0	0	6.365	12.595	96.785	128.514	42.83	0.6	0.601	0.001	0.001
Darlington	Power Production Water	10	18.836	17.026	19.061	18.511	19.191	18.321	19.043	18.715	18.446	18.837	18.226	18.832
Darlington	Supply	23	171.575	172.343	190.437	203.55	183.877	202.105	233.105	209.298	189.006	193.977	176.753	175.079
Dillon	Irrigation	8	0	0	0	0	44.441	86.944	52.078	15	6	0	0	0
Dillon	Water Supply	24	126.881	115.843	124.045	126.246	135.654	136.376	150.192	140.548	128.354	129.953	119.942	122.328
Dorchester	Golf Course	1	0	1	0	1	1	1	1	0	2	2	1	0

County	Use Type	Number of Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dorchester	Industrial	16	30.481	29.554	32.279	33.459	35.363	37.068	39.432	36.81	36.166	33.938	32.98	30.426
Dorchester	Irrigation	3	0.2	0.2	0.2	0.2	1.5	5.25	1.8	0.3	0.45	0.2	0.2	0.2
Dorchester	Water Supply	27	31.529	26.987	39.43	38.824	41.095	40.46	43.094	40.42	38.711	38.52	37.948	31.67
Edgefield	Golf Course	8	16.9	0	16.9	16.9	16.9	16.9	16.9	18.4	18.4	18.4	18.4	9.2
Edgefield	Irrigation	10	0.1796	4.822	15.0046	5.7455	7.0046	6.7744	8.3804	6.8852	6.7455	5.0046	2.6556	0.0155
Fairfield	Water Supply	11	6.445	5.475	6.303	6.089	6.371	6.263	6.581	6.327	6.624	6.616	6.551	6.308
Florence	Golf Course	7	5.2	1.89	1.32	4.84	8.72	4.33	6.15	5.5	2.38	5.53	7.7	4.84
Florence	Industrial	12	67.241	77.194	73.131	67.769	81.228	81.209	89.297	82.173	77.866	80.481	77.035	81.278
Florence	Irrigation	11	1.261	1.282	1.311	2.324	11.865	16.59	13.425	3.431	4.431	6.445	5.402	2.217
Florence	Water Supply	52	359.08	323.662	379.864	376.003	391.094	394.5	385.646	355.878	353.08	346.6681	329.04	335.719
Georgetown	Golf Course	3	0	9.1	379.804	3.4	3.6	2.31	2.2	8.8	0.11	1.9	10.6	0
Georgetown	Industrial	7	8.677	7.558	7.554	7.499	9.945	7.967	12.342	14.221	7.602	7.698	11.827	9.312
Georgetown	Irrigation	1	0.077	0	0	0	1	1.5	2	2	1.5	0	0	0
Georgetown	Water		U	U	U	U	ı I	1.5			1.5	U	U	U
Georgetown	Supply	39	85.519	86.118	89.1979	89.505	94.4882	112.137	107.087	104.612	118.3028	108.684	97.27	95.214
Greenville	Golf Course	4	0.085	0.1	0.3182	0.376	0.1076	0.3998	0.2884	0.073	0.337	0.5328	0.087	0.663
Greenville	Industrial Water	21	3.959	7.012	7.33	5.249	8.8084	10.116	5.297	5.591	6.19	7.696	6.896	5.951
Greenville	Supply	9	2.02479	1.85106	2.29621	3.28015	4.29724	5.65136	6.10205	5.01215	3.46725	2.95036	2.48327	2.16223
Greenwood	Golf Course	2	0.001	0.001	0.001	0.001	0.002	0.004	0.01	0.01	0.008	0.003	0.002	0.001
Greenwood	Industrial	1	0.077	0.116	0.155	0.271	0.387	0.619	0.697	0.697	0.619	0.581	0.116	0.077
Greenwood	Irrigation	1	0.04	0.04	0.1	0.15	0.2	0.2	0.15	0.1	0.1	0.04	0.04	0.04
Hampton	Aquaculture	2	12.7	26.1	17.8	10.1	25.65	14.4	11.3	9	21.1	9.1	16.1	13.5
Hampton	Golf Course	3	0.1	0.1	0.11	1.7	2.53	3.03	2.94	3.02	2.52	0.3	0.5	0.11
Hampton	Industrial	3	12.5	11.6	15.3	13.6	16.4	16.2	21.3	18.4	13.9	11.8	9.2	10.1
Hampton	Irrigation	89	12.186	35.194	38.926	141.595	276.018	433.698	847.287	184.687	99.626	94.981	66.959	17.938
Hampton	Water Supply	18	22.4643	21.1686	22.2352	22.1453	25.6157	27.3358	24.9782	26.9808	21.9404	25.8773	24.0234	23.1499
Horry	Golf Course	79	12.9338	20.327	44.292	86.7448	87.058	103.291	128.248	73.8822	63.5258	67.242	36.596	11.838
Horry	Industrial	5	4.281	3.335	3.912	3.3534	3.652	3.478	2.969	3.527	3.235	1.955	1.4655	1.0793
Horry	Irrigation	16	11.556	10.919	5.93	15.997	14.297	18.072	16.352	4.846	14.517	19.807	12.095	8.437
Horry	Other	20	0.003	0.077	0.103	0.156	0.363	0.248	0	0	0	0.031	0.481	0.492
Horry	Water	70	132.026	122.302	144.537	163.1237	164.3409	185.7818	178.4463	148.5626	144.1229	184.836	181.925	164.292

County	Use Type	Number of Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Supply													
Jasper	Golf Course	2	0	0	3.078	4.816	0	5.516	0.5	0	0	0	0	0.1
Jasper	Irrigation	15	0.0125	0	2.574	45.5861	54.4815	33.986	103.651	17.239	25.4611	28.289	26.4538	10.197
laanar	Water	12	26.691	23.918	27.708	28.644	22.586	28.487	32.111	29.251	28.425	27.914	27.796	26.22
Jasper Kershaw	Supply Golf Course	1	0	23.916	1	3	3	3	32.111	3	3	3	27.790	1
Kershaw	Industrial	41	36.992	30.655	31.588	33.161	30.124	30.779	31.047	33.577	31.55	37.831	32.83	30.42
Kershaw	Irrigation	1	0	0	0	0	23	23	23	23	23	0	0	0
	Water													
Kershaw	Supply	32	59.256	45.065	50.259	48.749	58.899	62.78	66.397	59.492	56.289	54.448	52.212	59.284
Lancaster	Golf Course	10	0.057	0.074	0.664	1.795	2.759	5.351	4.794	1.994	2.757	1.831	0.405	0.188
Lee	Irrigation Water	23	0	0	0	4.95	67.453	138.703	190.516	57.08	14.702	0	2.6	0
Lee	Supply	7	46.036	41.559	45.83	44.207	45.223	42.681	47.912	46.603	42.093	43.806	42.511	42.105
Lexington	Industrial	9	23.563	20.896	29.839	31.265	47.119	34.935	31.653	34.039	27.525	24.902	31.512	21.558
Lexington	Irrigation	55	38.416	40.919	55.213	131.781	419.451	513.658	706.555	431.519	258.748	231.162	192.295	102.735
Lexington	Mining	8	43.4107	2.60075	51.0708	3.35088	50.23099	3.92093	66.70095	4.2013	52.1913	24.5407	3.70099	27.871
Lexington	Water Supply	20	35.242	32.72	37.8984	40.447	46.8388	46.8258	52.7518	43.5168	40.5537	40.72246	35.316	36.9485
Marion	Golf Course	1	0	0	0	0	0	0.06	0.06	0.06	0.03	0	0	0
Marion	Irrigation	4	0	0.588	10.788	24.088	0.621	37.425	29.925	47.025	6.588	0.588	0.54	0.54
Ivialion	Water						0.021				0.300			
Marion	Supply	26	90.129	86.658	97.334	93.243	96.763	94.736	106.024	101.075	96.503	98.048	91.485	92.097
Marlboro	Industrial	4	7.1	7	13.1	12.6	16.2	12.8	11.6	16.2	15.6	7.1	1.7	1.4
Marlboro	Irrigation Water	16	0.5	0.5	1.4	4.789	20.105	55.997	53.173	18.8	7.796	1.855	0.1	0.2
Marlboro	Supply	20	94.743	82.993	89.024	82.437	91.589	93.645	97.409	94.328	92.146	94.461	83.602	87.736
Newberry	Irrigation	11	3.45	3.45	3.45	3.5	4.75	7.15	4.8	3.95	3.9	3.85	3.6	3.45
Nowborn	Water	2	1.389	0.976	1.122	1.284	0.783	0.85	0.615	1.026	1 42	1.066	1.128	1.239
Newberry	Supply Water	2	1.389	0.976	1.122	1.284	0.783	0.85	0.615	1.026	1.43	1.000	1.128	1.239
Oconee	Supply	4	1.44	1.6	2.27	2.24	2.79	2.77	3.33	3.06	2.67	2.18	1.98	1.95
Orangeburg	Golf Course	3	2.333	3.473	4.939	11.607	14.318	11.781	15.507	6.5	8.971	10.913	7.944	1.9
Orangeburg	Industrial	9	2.618	2.09	2.174	3.112	11.438	16.15	13.777	15.422	15.158	18.52	15.274	11.878
Orangeburg	Irrigation	84	26.577	40.194	90.561	219.426	399.353	518.746	534.117	415.1	323.062	257.229	145.15	46.669
Orangeburg	Mining	1	461.58	227.42	156.52	260.92	245.42	251.24	164.59	151.48	151.48	263.33	270.37	234.66
Orangeburg	Power	2	128.972	59.337	144.438	138.447	85.74	136.475	149.564	147.388	37.896	2.514	44.928	112.272

County	Use Type	Number of Sources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Production													
Orangeburg	Water Supply	20	39.489	34.338	35.643	36.287	37.361	38.771	42.46	40.482	38.146	37.125	41.971	37.597
Richland	Aquaculture	1	0	0	2	6	2.2	1.6	1	1	0	0	1	1.5
Richland	Golf Course	20	0.015	0.015	0.855	3.22	6.531	9.057	7.938	12.897	6.802	5.015	0.515	0.115
Richland	Industrial	3	66.485	61.159	61.426	62.114	52.36	56.192	57.019	58.649	56.884	53.061	61.972	59.928
Richland	Irrigation	1	0.729	1.557	2.339	0.766	0.3	0.39	0.391	0	0	0	0	0
Richland	Mining	1	25.2	36.36	30.66	4.92	2.16	28.98	21.36	37.98	0	2.52	13.92	11.28
Richland	Water Supply Water	10	21.62	17.848	15.894	16.091	16.731	17.485	19.802	19.412	20.84	16.614	18.801	21.647
Saluda	Supply	1	0.372	0.424	0.93	1.174	0.965	1.189	0.328	1.056	0.406	0.281	0	0.975
Spartanburg	Golf Course	5	0.438	0.397	0.964	1.467	3.372	3.836	4.723	3.942	2.336	2.504	1.992	1.879
Spartanburg	Industrial	1	0	0	0	0	0	0	0	0	0	0	0	0
Spartanburg	Water Supply	3	2.4	2.2	2.3	2.4	2.7	3.1	2.6	2.9	2.4	2.2	1.8	1.8
Sumter	Golf Course	4	0.21	0.752	0.52	4.15	6.275	12.125	12.625	11.3	13.35	7.8	0.937	0.856
Sumter	Industrial	17	12.294	10.912	11.201	10.033	8.589	9.408	11.944	13.564	9.913	10.322	9.453	9.87
Sumter	Irrigation	34	5.84	5.84	37.693	112.057	190.828	299.305	245.495	124.695	74.162	36.399	7.71	0
Sumter	Water Supply	47	404.804	371.758	386.764	400.126	436.387	455.798	480.947	453.222	417.208	417.524	382.287	358.381
Union	Industrial	1	0.221	0.234	0.258	0.171	0.212	0.235	0.211	0.184	0.118	0.029	0.14	0.2
Williamsburg	Industrial	6	26.436	21.7	24.3	25.384	24.416	24.8	25	27.1	24.67	28.634	24.3	30.2
Williamsburg	Irrigation	2	0	0	0	0	1.1	0.7	1.4	2.2	1.4	0	0	0
Williamsburg	Water Supply	17	69.528	64.865	67.692	65.867	73.446	77.747	77.147	76.702	73.129	70.269	68.859	73.016
York	Golf Course	5	1.95	4	4.75	13.2	20.6	21.1	20.9	22.4	14.6	9.4	4.9	4.6
York	Industrial	3	0.261	0.357	0.263	0.255	0.181	0.284	0.396	0.518	0.166	0.201	0.328	0.321
York	Mining	1	9.06	5.4	7.62	4.92	6.42	16.08	8.34	5.34	10.68	5.28	3.66	5.28
York	Water Supply	6	0	0	0	0	0	0	0	0	0	0	0	0